U. S. DEPARTMENT OF AGRICULTURE.

FARMERS' BULLETIN No. 183.

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MEAT ON THE FARM:

BUTCHERING, CURING, AND KEEPING.

BY

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WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1903.

LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY,
Washington, D. C., October 1, 1903.

SIR: I have the honor to transmit herewith the manuscript of an article on Meat on the Farm: Butchering, Curing, and Keeping, by Mr. Andrew Boss, of the University of Minnesota, an eminent authority on the subject, and to recommend its publication as a Farmers' Bulletin.

Respectfully, D. E. SALMON, *Chief.*

Hon. JAMES WILSON, *Secretary.*

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MEAT ON THE FARM.

BUTCHERING.

SELECTION OF ANIMALS.

In the selection of animals for meat health should be given first consideration. No matter how fat an animal may be nor how good its form, if it is not in perfect health the best quality of meat can not be obtained. If suffering from fever or any serious derangement of the system, the flesh will not be wholesome food. Animals are often killed that are infected with actinomycosis (lumpy jaw), tuberculosis (consumption), cholera, swine plague, and other diseases of like nature. There is little direct evidence of harmful results from the use of such animals as food when in the early stages of disease, but since it is almost impossible to distinguish between the incipient and the fully developed forms of the disease, or to know when it becomes virulent, the safer course is to discourage the use of anything known to be in imperfect health. Flesh from animals that have recovered from the ravages of disease before slaughter is not likely to cure well and is very difficult to keep after curing. Bruises, broken limbs, or like accidents all have the same effect on the meat as ill health, and, unless the animal can be bled and dressed immediately after such accident, it is not best to use the meat for food. This would hold true especially if there has been a rise in temperature of 2° or more. A rise in temperature at or just previous to slaughtering is almost sure to result in stringy, gluey meat, and to create a tendency to sour in curing.

Condition.—First-class meat can not be obtained from animals that are poor in flesh. A reasonable amount of fat must be present to give juiciness and flavor to the flesh, and the fatter an animal is, within reasonable limits, the better will be the meat. The presence of large amounts of fat is not essential, however, to wholesome meat, and it is far more important that an animal be in good health than that it be extremely fat. "Never kill an animal that is losing flesh" is a maxim followed by butchers, and observation points to a logical reason for the saying. With an animal failing in flesh the muscle fibers are shrinking in volume and contain correspondingly less water. As a consequence the meat is tougher and dryer. When an animal is gaining in flesh the

opposite condition obtains and a better quality of meat is the result. Also a better product will be obtained from an animal in only medium flesh, but gaining rapidly, than from a very fat animal that is at a standstill or losing in flesh.

Breeding and other factors.—Quality in meat is largely dependent on the health and condition of the animals slaughtered, and yet the best quality of meat is rarely, if ever, obtained from poorly bred stock. The desired "marbling," or admixture of fat and lean, is never of the best in scrub or native stock, nor do the "gaudy" fellows of the show ring, with rolls of fat on their ribs, furnish the ideal in quality of meat. There seems to be a connection between a smooth, even, and deeply fleshed animal and nicely marbled meat that is not easily explained. It is found that the two go together usually, unless the animals are carried along too far, in which case there may be a surplus of "spine," or outside, fat.

Fine bones, soft, luxuriant hair and mellow flesh are always desirable in an animal to be used for meat, as they are indications of small waste and good quality of meat.

Age for killing.—Age affects the flavor and texture of the meat to quite an extent. While it is not possible to state the age at which an animal will be best for meat, it is a well-known fact that meat from old animals is more likely to be tough than that from young ones. The flesh of very young animals frequently lacks flavor and is watery. An old animal properly fattened and in good health would be preferable to a young one in poor condition.

Cattle are fit for beef at 18 to 20 months if properly fed, though meat from such animals lacks in flavor. The best meat will be obtained from animals from 30 to 40 months old, though they may be used at any age if in good condition. A calf should not be used for veal under 6 weeks of age, and is at its best when about 10 weeks old and raised on the cow. There is a law in most States against selling veal under 6 weeks of age. Hogs may be used at any age after 6 weeks, but the most profitable age at which to slaughter is 8 to 12 months. Sheep may be likewise used when 2 to 3 months of age and at any time thereafter. They will be at their best previous to reaching 2 years of age, usually at 8 to 12 months.

PREPARATION OF ANIMALS FOR SLAUGHTER.

It is important that an animal intended for slaughter should be kept off feed from twenty-four to thirty-six hours. If kept on full feed the system is gorged and the blood loaded with assimilated nutrients is driven to the extremities of the capillaries. In such a condition it is impossible to thoroughly drain out the veins when the animal is bled, and a reddish colored, unattractive carcass will be the result. Food in the stomach decomposes very rapidly after slaughter, and where

the dressing is slow the gases generated often flavor the meat. Water should be given freely up to the time of slaughter, as it keeps the temperature normal and helps to wash the effete matter out of the system, resulting in a nicely colored carcass.

The care of animals previous to slaughter has considerable effect on the keeping qualities of the meat. It is highly important that they be not excited in any way sufficiently to raise the temperature of the body. Excitement prevents proper drainage of blood vessels, and if extreme will cause souring of the meat very soon after dressing. In no instance should an animal be killed immediately after a long drive or after a rapid run about the pasture. If heated by such cause it is far better to allow it to rest overnight before killing than to risk the meat spoiling. The flesh of an animal that has been overheated is usually of a pale color and very often develops a sour or putrid odor within three or four days after being dressed. It is also essential that the animal be carefully handled so as not to bruise the body. Bruises cause blood to settle in that portion of the body affected, presenting an uninviting appearance, and often cause the loss of a considerable portion of the carcass. A thirty-six-hour fast, plenty of water, careful handling, and rest before slaughter are all important in securing meat in the best condition for use, either fresh or for curing purposes.

KILLING AND DRESSING CATTLE.

Where much meat is prepared for use on the farm it will be best to provide such tools as are necessary for the rapid prosecution of the work. A 7-inch curved skinning knife at 35 cents, an 8-inch straight sticking knife at 35 cents, a 14-inch steel at $1, a 28-inch meat saw at $2, a candlestick scraper at 25 cents, and an ax are all of the tools really essential to rapid dressing (fig. 1). Some means of raising the carcasses of beef from the ground or floor and a place to hang the lighter animals should also be provided. What these arrangements shall be depends largely on the amount of work to be done and the circumstances. A block and tackle with 6-inch pulleys (fig. 10) will answer the purpose very well where they may be had and a suitable place is at hand for suspending them. In its absence various appliances may be used, some of which are suggested by accompanying illustrations.

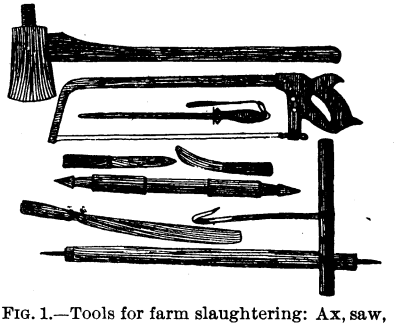

FIG. 1.—Tools for farm slaughtering: Ax, saw, steel, sticking knife, skinning knife, hog gambrel, hog hook, corn knife, pritch.

The first step in killing and dressing a beef is to secure the animal so that it can not get away under any emergency. For this purpose a rope three-fourths of an inch in diameter should be used. Put a slip

noose in one end with a knot just far enough from the noose to prevent choking when drawn tight. It should at the same time allow the noose to draw tight enough so that there will be no danger of escape if the rope becomes slack. If the beast has horns pass the noose over the head back of the ear and horn on the right side but in front of the horn on the left side of the head. This leaves the face bare and does not draw tightly on the throat. Where a dehorned or polled beast is to be secured the noose must be adjusted around the neck. Attach an ordinary hayfork pulley to a post, close to the ground, or to the barn floor or sill. Pass the rope through it and draw the animal's head down as close as possible. Stun completely by a heavy blow in the center of the forehead at the point where lines drawn from the eye on either side to the base of the horn on the opposite side would intersect (fig. 2).

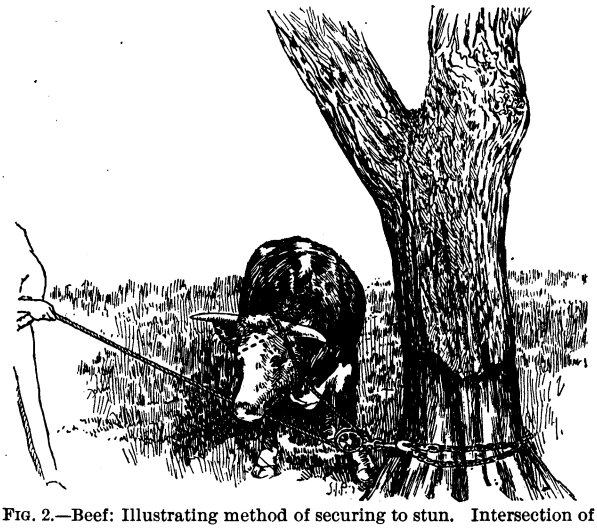

FIG. 2.—Beef: Illustrating method of securing to stun. Intersection of dotted lines shows place to strike.

Shooting has the same effect as stunning, and where deemed best may be resorted to. Some danger attends the use of a rifle about farm buildings, however, and the use of an ax is advisable where the animal can be caught.

Bleeding.—Bleed by sticking the animal just in front of the sternum, or breastbone. To do this properly requires practice and close observation (fig. 3). Stand in front of the neck of the animal with the back toward the body. Place one foot against the jaw and with the other hold back the front legs. Reaching down between the feet, lay open the skin from breastbone toward the chin for a distance of 10 or 12 inches, using the ordinary skinning knife. Insert the knife with the back against the breastbone and the tip pointed directly toward the spinal column at the top of the shoulders, cutting just under the windpipe, and about 5 to 6 inches in depth. The vein and artery cross just at this point, and if they are severed the blood will flow out very rapidly. When the vein has been cut below the windpipe, run the knife in on top of it and sever the blood vessels on that side also. If stuck too deep the pleura will be punctured and blood

will flow into the chest cavity, causing a bloody carcass. This should be avoided.

While an animal will bleed out if only one side is cut, it will bleed

FIG. 3—Beef: Place to stick and manner of sticking.

more quickly and the blood will be more nearly siphoned out if both sides are opened. A little practice is needed to become expert in "sticking" a beef, but, once learned, the art is never forgotten. Not so much skill is required simply to cut the animal's throat back of the jaws, but it is at the expense of quick bleeding.

FIG. 4.—Beef: Skinning the face, illustrating manner of starting to skin a beef.

Skinning and gutting.—Begin skinning as the carcass lies on its side by splitting the skin through the face from poll to nose (fig. 4). Skin the face back over the eyes on both sides and down over the cheeks. Cut around the base of the horns leaving the ears on the hide. Split the skin from the chin

down the throat to meet the incision made in bleeding. Start the skin in slightly on the sides of the neck and down to the jaws. Remove the head by cutting from just back of the jaws toward the depression back of the poll (fig. 5). The atlas joint will be found at this point, and may easily be unjointed with the knife. The carcass should then be rolled on its back and held by a small stick 3 feet long, with a sharp spike in each end, one end being inserted in the brisket and the other in the floor. Split the skin over the back of the fore legs from between the dew claws to a point 3 or 4 inches above the knee. Skin around the knee and shin, unjointing the knee at the lowest articulation (fig. 6), and skin clear down to the hoof. The brisket and forearms should not be skinned until the carcass is hung up. Cut across the cord over the hind shin to relax the foot. Split the skin from the dew claws to the hock and up over the rear part of the thigh to a point 4 to 6 inches back of the cod or udder. Skin the hock and shin, removing the leg at the lowest joint of the hock (fig. 7). In splitting the skin over the thigh the knife should be turned down flat with the edge pointed outward to avoid gashing the flesh. While the hind leg is stretched ahead it is well to skin

FIG. 5.—Beef: Removing the head.

FIG. 6.—Beef: Showing manner of unjointing fore leg and skinning shank.

FIG. 7.—Beef: Unjointing the hind leg.

down over the rear of the lower thigh, but no attempt should be made to skin the outside of the thigh until the hind quarters are raised. After the legs are all skinned split the skin over the mid line from breast to rectum.

Begin at the flanks and skin along the mid line until the side is nicely started. Then, with a sharp knife held nearly flat against the surface and the hide stretched tightly, remove the skin down over the sides with steady downward strokes of the knife (fig. 8). It is important that the skin be stretched tight, with no wrinkles in it. Care should be taken to leave the covering of muscle over the abdomen on the carcass. Its presence on the hide is not entirely objectionable, but a carcass looks much better and keeps better with it on. In "siding" a beef it is customary to go down nearly to the backbone, leaving the skin attached at the thighs and at the shoulders; skin over the buttock and as far down on the rump as possible. Care should be taken at all times to avoid cutting into the flesh or tearing the membrane covering it. If the meat is to be kept fresh for any length of

FIG. 8.—Beef: "Siding down;" knife held flat against the tightly stretched skin.

time mold will form in such places and will be hard to clean off. A coarse cloth and a pail of hot water should be at hand while skinning, and all blood spots should be wiped from the surface. The cloth should be wrung nearly dry for this purpose, and the less water used the better.

Open the carcass at the belly with a knife and pull the small intestines out to one side. Open the brisket and pelvis with a saw or sharp ax. After raising the windpipe and gullet and cutting loose the pleura and diaphragm along the lower part of the cavity, the carcass is ready to raise (figs. 9 and 10).

When raised to a convenient height remove the hide over the thighs, rump, and hips. While in this position loosen the rectum and small intestines and allow them to drop down over the paunch. The "bed fat" lining the pelvis and the kidney fat should not be disturbed nor mutilated.

The intestines are attached to the liver, from which they may be separated with a knife. The paunch is attached to the back at the

FIG. 9.—Beef, ready to raise: Breast, forearms, and neck left covered to protect the meat until the carcass is raised.

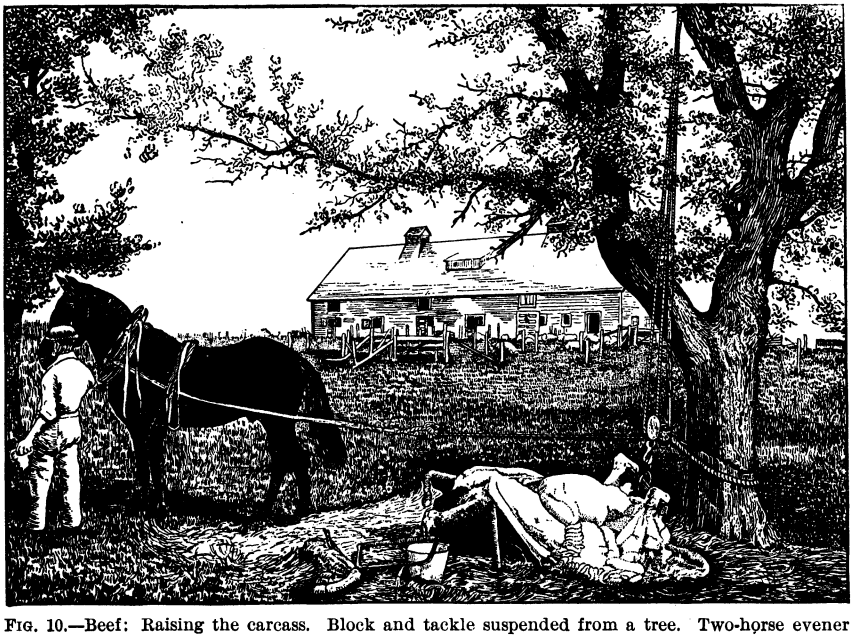

FIG. 10.—Beef: Raising the carcass. Block and tackle suspended from a tree. Two-horse evener used as a gambrel.

left side and may be pressed down upon with sufficient force to tear it loose (fig. 11). Let it roll onto the ground, and cut off or draw

out the gullet. Raise the carcass a little higher and take out the liver, first removing the gall bladder. Remove the diaphragm, lungs, and heart, and finish skinning over the shoulders, arms, and neck (fig. 12).

FIG. 11.—Beef: Removing paunch and intestines.

Sponge all blood and dirt off with the cloth. Split the carcass into halves with a saw, if one can be had; if not, use a cleaver or a sharp ax. Wash out the inside of the chest cavity and wipe it dry. Trim

off all bloody veins and scraggy pieces of the neck and leave the beef to cool before cutting into quarters (fig. 13).

FIG. 12.—Beef: Skinning shoulders and forearms.

Dressing veal.—Veal for home use should be dressed in a manner similar to beef, except that more of the work should be done with the body hung up. The calf should be skinned while warm and the entrails removed, the pelvis and sternum being split as for beef. The calf should be over 6 weeks old, and will make better veal if allowed to run with the mother. The fat in the carcass should be abundant, white, and brittle.

Treatment of hides.—The skins of cattle represent considerable value if properly saved. To save them is an easy matter during the cold season in the North, as they may be rolled up and kept frozen until disposed of. In the South and in warm seasons, however, they should be spread out flat, hair side down, the legs, flanks, etc., stretched and all parts rubbed thoroughly with common salt. Particular pains should be taken to reach all surfaces of the skin. If more than one skin is to be salted they should be spread one on top of the other, and salted as spread, with the hair side down. Where only one hide is to be handled the legs and head should be folded in and the hide rolled up as soon as salted. Enough salt should be used to cure the hide thoroughly if it is to be kept for any length of time. Ten to 12 pounds of salt will be sufficient for an ordinary hide.

FIG. 13.—Beef raised out of the way of animals to cool.

DRESSING SHEEP.

Much of the sheepy flavor of mutton comes from the generation of gases in the stomach after the sheep is killed. For this reason they should be dressed as rapidly as possible. A platform 6 or 8 inches high is a

convenient thing to work on, and aids in keeping the blood away from the body, insuring a cleaner carcass. A clean dry place is necessary for neat work. Water or blood on the wool makes it very difficult to dress the animal nicely.

Killing.—If the sheep is an old one it may be stunned before bleeding. If a young one the same purpose is served by dislocating the neck after cutting the throat. This is accomplished by putting one hand on the poll or top of the head and the other hand under the chin, giving a sharp twist upward. Lay the sheep on its side on the platform, with its head hanging over the end. Grasp the chin in the left

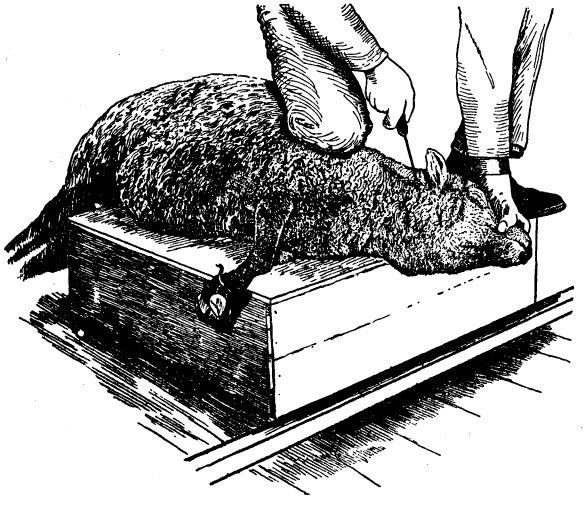

FIG. 14.—Manner of sticking a sheep.

hand and stick a knife through the neck, just back of the jaw (fig. 14). The cutting edge of the knife should be turned toward the spinal column and the flesh cut to the bone. In this way it is possible to avoid cutting the windpipe.

Skinning.—Split the skin over the back of the front legs from the dew claws to a little above the knees (fig. 15). Open the skin over the windpipe from brisket to chin, starting it slightly on the sides of the neck. Split the skin over the back of the hind legs to the middle line and skin the buttock. The skin should also be raised over the cod and flanks. Skin around the hocks and down to the hoofs, cutting off the hind feet at the toe joints. Run the knife between the cords and bone on the back of the shins, and tie the legs together just above the pastern joints. No attempt should be made to skin the legs above the hock until after the carcass is hung up. Hang the sheep up by the hind legs and split the skin over the middle line. Start at the brisket to "fist off" the skin. This is done by grasping the edge of the pelt

firmly in one hand, pulling it up tight and working the other with fist closed between the pelt and the body (fig. 16). The "fisting off" should be downward over the fore quarters and upward and backward over the hind quarters and legs. It is unwise to pull down on the skin over the hind legs, as the membrane covering the flesh is sure to be ruptured and an unsightly appearance given to the carcass. The wool should always be held away from the flesh for the sake of cleanliness. The skin on the legs should be pulled away from the body rather than toward it, in order to preserve the covering of the meat. When the pelt has been loosened over the sides and back it should be stripped down over the neck and cut off close to the ears. The head may then be removed without being skinned by cutting through the atlas joint.

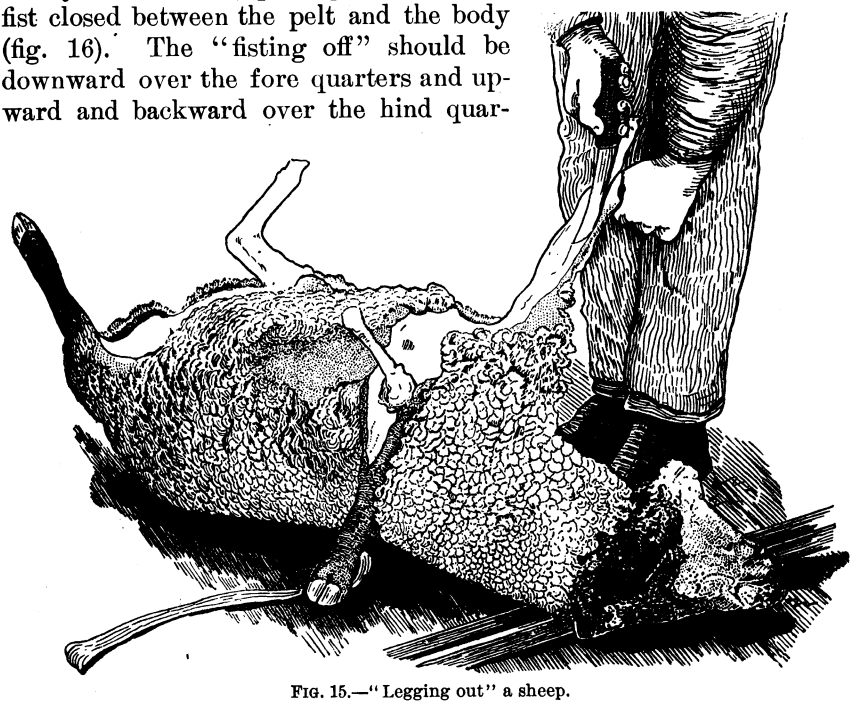

FIG. 15.—"Legging out" a sheep.

FIG. 16.—Fisting off the pelt.

Gutting.—Begin removing the entrails (fig. 17) by cutting around the rectum and allowing it to drop down inside. Do not split the pelvis. Open down the belly line from the cod to the breastbone and take out the paunch and intestines, leaving the liver attached to the diaphragm. If the mutton is for home use split the breastbone and remove the heart, lungs, and diaphragm together. For marketing it is best not to split the breast.

Reach up into the pelvis and pull out the bladder. Wipe all blood and dirt from the carcass with a coarse cloth wrung nearly dry from hot water. Double up the front legs and slip the little cord, found by cutting into the fleshy part of the forearm, over the ankle joints.

DRESSING HOGS.

Quite essential for rapid and neat work at hog-killing time is proper equipment. A good sticking knife, hog hook, scrapers, and a convenient place for working are among the important items of consideration. A barrel is the receptacle commonly used for scalding, and there is no need of anything better. If it is set at the proper slant, with the open end against a table or platform of the proper height and the bottom securely fastened, there is little danger of accidents and the work can be quite easily performed. A strong table built for the purpose would be a very desirable thing on which to work, though it is not absolutely necessary. A box often serves very well.

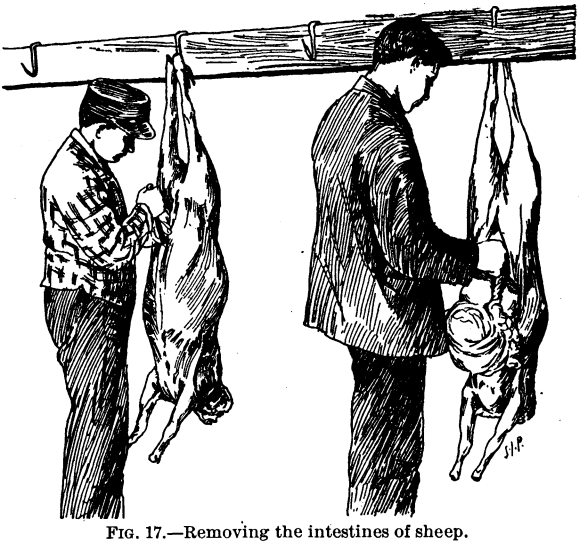

FIG. 17.—Removing the intestines of sheep.

The same caution should be observed about exciting or heating hogs before slaughtering as is noted in discussing the dressing of beef. The more quietly they can be handled the better. In catching and throwing them, bruising must be avoided.

Killing.—It is not customary to stun hogs before sticking them, although in some localities this is often done. At slaughterhouses they are usually hung up by one hind leg for sticking, and, where appliances are at hand and labor is scarce, that is advisable. The more common way, however, is to lay the animal on its back, where it is held until stuck. Two men can handle a large hog if they work intelligently. By reaching under the animal, one at the fore legs and one at the hind legs, they can turn a heavy hog on its back easily. Then one man standing astride the body with his feet close against its sides and holding its front legs can easily control it while the other

does the sticking (fig. 18). The knife, narrow, straight bladed, 8 inches long, is inserted into the hog's throat just in front of the breastbone. The point is directed toward the root of the tail and held exactly in line with the backbone. This is necessary to avoid running it between the ribs and the shoulder, causing the blood to settle there, with consequent waste in trimming or a poorly keeping shoulder. When the knife has been run into the neck 6 to 8 inches, the depth depending on the size of the hog, it should be given a quick turn to one side and withdrawn. The arteries that are to be cut run close together just inside of the breastbone and will both be cut when the knife is turned, provided it is sharp on both sides of the point.

FIG. 18.—Manner of holding and sticking a hog.

Scalding and scraping.—The water for scalding should be heated to a temperature of 200° to 212° F. Where it must be heated in the house, as is often the case, it should be boiling when removed from the stove. If put into a cold barrel it will then be about the right temperature when the hog is ready to be scalded. It may not be out of place to state that the water should be nearly boiling before the hog is killed, but should not be removed from the fire until the hog is nearly dead. At the time the hog is scalded (fig. 19) the water should be at a temperature of 185° to 195°. Water at 165° to 175° will scald a hog, but more time will be required, and the results are hardly as satisfactory. If the water is too hot the hair is likely to set, causing even more trouble than if too cold. It is not expected that a thermometer will always be used, but if the water is boiling when taken from the stove and put into a cold barrel the temperature will be about right. If the barrel is hot, as it would be

FIG. 19.—Scalding a hog. Note arrangement of table and barrel.

ordinarily for the second hog scalded, add a half pail of cold water. By testing the water with the finger each time, one can soon become expert in gauging the temperature. A small shovelful of hard-wood ashes added to the water aids materially in removing the scurf from the body, though it has no effect in loosening the hair. A lump of lime, a handful of soft soap, a little pine tar, or a tablespoonful of concentrated lye has the same effect.

The hog should not be scalded before life is extinct, or the blood in the small blood vessels near the surface of the skin will be cooked, giving a reddish tinge to the carcass. While being scalded the hog should be kept moving constantly to avoid cooking the skin. Occasionally it should be drawn out of the water to air—when the hair may be "tried." As soon as hair and scurf slip easily from the surface, scalding is complete. If it is suspected that the water is too hot, scald the hind end first; if too cold the front end, in order to always get a good scald on the head, which is difficult to clean.

FIG. 20.—A convenient way of hanging up a hog.

When the hair starts readily, remove the animal from the water and begin scraping. The head and feet should be cleaned first, as they cool quickly and do not clean so easily when cold. The head can best be cleaned with a small round tool called a "candlestick" scraper. The hands and a knife will answer where such a scraper is not to be had. The feet and legs are easily cleaned by grasping them firmly with the hands and twisting around and back; clean the body by pulling out the long bristles by hand and removing the scurf and fine hair with a scraper, a long corn knife, or other tool. Rinse over the entire carcass with hot water, then shave it with a sharp knife. Clean the ears and nose thoroughly and the feet clear to the hoofs. Raise the gambrel cords, insert the stick, and hang up the hog (fig. 20). Wash down with hot water, again shave over any unfinished patches, and rinse with cold water.

Occasionally a hog is killed that is too large to scald in a barrel. If it is covered thickly with blankets or with sacks containing a little bran, and hot water poured over it, the hair will be loosened readily. In some localities hogs are skinned, but scalding is far more satisfactory.

Gutting.—In removing the entrails (fig. 21) first split the hog between the hind legs, separating the bones with the knife. This can easily be done if the cut is made directly through the joint. Run the knife down over the belly line, shielding the point with the fingers of the left hand and guiding it with the right. There is little danger of cutting the intestines in this way. Split the breastbone with the knife or an ax and cut down through the sticking place to the chin. Cut around the rectum and pull it down until the kidneys are reached, using the knife wherever necessary to sever the cords attaching it to the "bed." Do not disturb the kidneys or the fat covering them, except in warm weather, when the "leaf" may be removed to allow quicker and more thorough cooling. Remove the intestines and paunch together. The gall bladder lies in plain sight on the liver, as it lies attached to the diaphragm and hepatic vein. It should be stripped off after starting the upper, or "duct," end with the knife. Avoid spilling the contents on the meat. Insert the fingers under the liver and strip it out. Cut across the artery running down the backbone and cut around the diaphragm, removing them with the "pluck;" that is, heart, lungs, gullet, and tongue. Open the jaw and insert a small block to allow free drainage. Wash out all blood with cold water and sponge out with a coarse cloth. In hot weather the backbone should be split, to facilitate cooling. The fat should be removed from the intestines before they get cold. Since it is strong in flavor it should not be mixed with the leaf lard in rendering.

FIG. 21.—Opening the abdomen to remove the intestines.

DRESSING POULTRY.

Poultry for use in the farm home is dressed in small quantities and kept only a few days at the most, hence circumstances will dictate largely the methods to be followed.

Where only one or two chickens are to be dressed there is no quicker or surer way of bleeding than the old-fashioned one of chopping off the head. If to be used in a day or two they should be scalded at once and picked. If they are plunged into a pail of very cold water as soon as picked the heat will be taken out of the skin and the bird will keep without the skin drying so much. The crop and intestines should be removed as soon as the skin is cooled, though if they are empty no harm will come from leaving them undrawn until the fowl is wanted for use.

Turkeys, geese, and ducks may be treated in the same way, though they are usually bled and dry picked. In dry picking turkeys, as soon as the feathers droop, showing that collapse has begun, picking should begin with the bird suspended from a hook. It is important that it be done rapidly so as to complete the work before the feathers set. Grasping only a few feathers between the finger and thumb, pull upward and backward. Leave the bird hanging until cool in order that the blood may settle to the head.

With ducks and geese, owing to the thickness of the feathers, dry picking is a slower process than with other fowls. After bleeding, place a board across an open barrel that is clean. Wrap a cloth around the head of the fowl to catch the blood. Lay the goose or duck on the board, and with thumb and finger strip the feathers into the barrel. When the feathers have been removed the down may be singed off with a gasoline or alcohol flame. A hot flame should not be used as it will give an oily appearance to the skin.

Where it is not important to save the feathers quicker work may be done by scalding the fowls and wrapping them in a sack or blanket to steam for a few minutes; since there is a little danger of their being steamed too much they should be closely watched. The feathers may then be removed as above, and the birds cooled and singed.

KEEPING OF MEATS.

COOLING THE CARCASS.

While it is almost impossible to get the best conditions for handling meat on the farm, a knowledge of the best principles may aid in getting a better quality of meat. It is very important that the carcasses be cooled soon after slaughtering, and yet that they be not allowed to freeze. While the temperature can not well be controlled on the farm, it is possible to slaughter when the weather is favorable to the proper cooling of the carcass. If during the winter season, choose a day when there is a prospect for cooling the carcass before the surface freezes. The most desirable temperature for cooling meat is 34° to 40°, and an approach to these temperatures will give good results.

In summer seasons it is best to dress the animal in the evening, leaving the carcass in the open air over night and carrying it to a cool, dark cellar before the flies are out in the morning. Very often a cool room in the barn can be used for the purpose if made dark. There should be no fresh paint, tar, kerosene, or like substance around, however, as freshly killed meat absorbs such flavors readily. Cooling is often hastened by splitting the carcasses into halves or even into small pieces. It is best, however, not to divide the carcass until the meat is firmly set unless absolutely necessary to prevent it from souring. For the best results in cooling meat, the air should be dry, as well as

of a low temperature; and free circulation aids greatly in carrying away foul odors and mold spores.

It is also important that flies and insects be kept away from the meat. If fly blown, maggots will soon appear and it will be very difficult to save the meat.

CUTTING UP MEAT.

To do neat work in cutting up meat one should have a short, curved knife (a skinning knife is as good as any), a 12 or 14-inch steak knife, a 26-inch saw, and an 8-inch cleaver. An ax may take the place of the cleaver, but is not nearly so useful (fig. 22). If a cross section of a large log can be had it will answer for a block. A table, however, can be used in most cases.

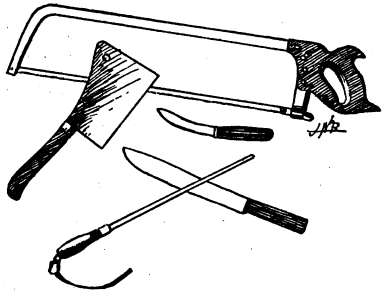

FIG. 22.—Tools for cutting meat: Saw, cleaver, steak knife, skinning knife, steel.

In cutting any kind of meat one should always cut across the grain of the meat. Following this principle will result in uniform pieces and the joints will be more easily carved after cooking. Cut to the bone with the knife, and use a saw rather than an ax for cutting the bone.

The cuts of beef.—Beef should not be cut until the muscles have set firmly. When they are in the proper condition divide the halves into hind and fore quarters, from S to T, between the twelfth and thirteenth ribs (fig. 23). This leaves one rib in the hind quarter. Lay the hind

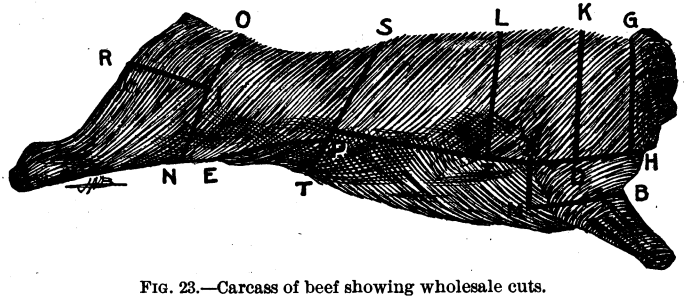

FIG. 23.—Carcass of beef showing wholesale cuts.

quarter on the block or table with the inside up. Remove the kidney and suet. Cut off the flank as indicated by the line N to P in the illustration. Turn the quarter over and cut off the loin, beginning at the middle of the sacrum near O, and cutting to a point 1½ or 2 inches above the stifle joint at N. If cut as directed but little sawing will be necessary, as the division will be made in front of the ball and socket joint of the hip. Turn the remainder of the quarter over and separate

the rump from the round just below the pelvic arch and parallel to the backbone, as indicated by line R to I.

Lay the fore quarter on the block with the outside up. Beginning at P (fig. 23), 10 to 13 inches down the rib from the spinal column—the distance depending on the thickness of the meat—cut across the ribs to the armpit above M. Cut between the third and fourth ribs to M, and then across the shank to B. Then cut off the "cross ribs" just below the shoulder joint, H to X. The prime "ribs" (fig. 24) are then taken off between the fifth and sixth ribs, counting from the front. This cut contains seven ribs and is usually taken off in one piece, though it may be cut into as many as are desired. Cut off the remaining five ribs called "chuck ribs" (fig. 25 *c*), making the division between the first rib and the shoulder bone.

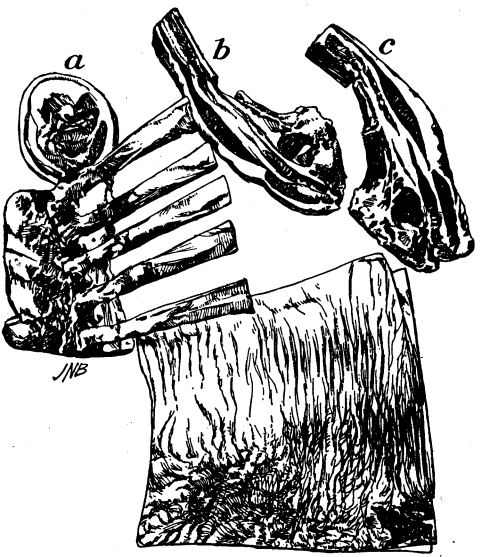

FIG. 24.—Prime ribs of beef: *a*, Rolled roast; *b*, folded roast; *c*, standing roast.

Divide the neck and shoulder—G to H. These cuts are all too large for family use and may be again divided into joints of suitable size for the table as wanted.

Uses of the cuts of beef.—The uses of the cuts of beef are, of course, varied to suit customs and families. There is no portion of the carcass but what may be cooked by boiling or by roasting. The texture of the muscles and the admixture of fat and lean each have an effect on the palatability and tenderness of meat. The mode of cooking will be in accordance with the joint at hand.

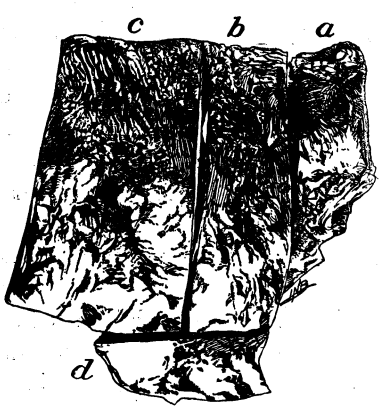

FIG. 25.—Square chuck of beef showing divisions: *a*, Neck; *b*, shoulder; *c*, chuck ribs; *d*, cross ribs.

The flank is usually boiled or braized but is also suitable for corning. Flank steak is sometimes cut from the lean muscle on the inside of the flank. The loin is commonly cut into steaks, though fancy trade often demands its use for roasting. In cutting steak from the loin one should begin at the "butt," or rear end, and cut parallel to the

line N O (fig. 23). The first slices cut are the sirloin steaks (fig. 26 *a*). They continue until the "hook point" is passed, when the slices are termed porterhouse steaks (fig. 26 *b*). These contain both the sirloin and tenderloin muscles, the sirloin above the spinous processes and the tenderloin muscle below. Unless both muscles are present it is not porterhouse steak. The porterhouse steaks are often erroneously called tenderloin steaks. The tenderloin steak consists of only the tenderloin muscle stripped from beneath the loin. Since it destroys the value of the porterhouse steaks to strip out the tenderloin muscle the tenderloin steaks are usually taken from thin cattle of the "canner" class. Porterhouse steaks are cut from the hip bone forward until the end of the tenderloin muscle is reached. The end of the loin containing the rib is used for roasting, though it may be cut into steak if desired. The rump, cut into suitable-sized pieces, makes pot roasts or boiling pieces of good quality. The round of beef is usually cut into steaks. If cut into pieces 4 to 6 inches thick it makes delicious roasts. Steaks should not be cut below the stifle joint. The remainder of the round may be used for pot roasts.

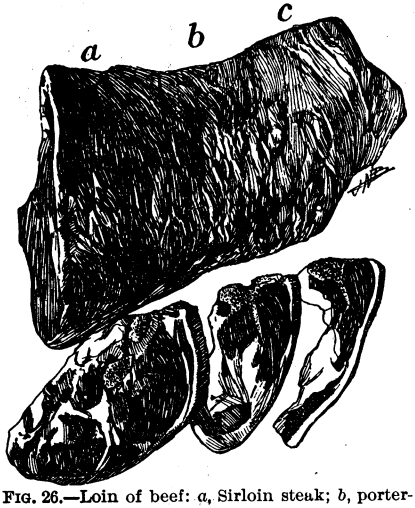

FIG. 26.—Loin of beef: *a*, Sirloin steak; *b*, porterhouse; *c*, sirloin strip.

The seven best ribs are used as oven roasts, and may be divided into one, two, or three-rib pieces, as desired. It is from this joint that the rolled roasts are obtained, hence its high value. The chuck-rib cut may likewise be subdivided into one or two-rib pieces for oven roasts, or, in the case of old or tough beef, for pot roasts. In making the "best rib" and "chuck rib" cuts the divisions should always be made parallel with the ribs. The shoulder is used for boiling, corning, or mince meat; the plate cut in strips across the ribs is used for stews and corning, and the shanks and neck for soup stock, mince meat, or sausage.

Cutting mutton.—First split the carcass (fig. 27) into halves, then cut off the flank and breast, following the line A B C D (fig. 28). Cut off the leg at the top of the round, A to K, just touching the hip joint. Remove the shank below the fleshy part of the leg. Cut off the shoulder between the third and fourth ribs and the neck at the shoulder vein. Remove the front shank at the elbow joint. Where a "saddle of mutton" is wanted, one must deviate from this method of cutting and cut the saddle in one piece before the carcass is split into halves.

The leg of mutton (fig. 29) is sometimes cut into steak, but is usually roasted whole or boiled. The loin may be used for chops (fig. 30), the

FIG. 27.—Finished carcass of mutton.

slices being cut parallel to the ribs, or it may be roasted if desired. The chops should be cut "one rib" thick. If used as an oven roast the joints in the backbone should be cracked with a cleaver to admit of easy carving at the table. The rack is used in the same way as the loin. The joints in the back of the shoulder (fig. 31) should be cracked and the ribs broken across the middle on the inside, when it may be used as an oven roast from a young mutton, or as a boiling piece if from an old one. The breast and flank when trimmed are used for stews; the neck and shank, for soup stock.

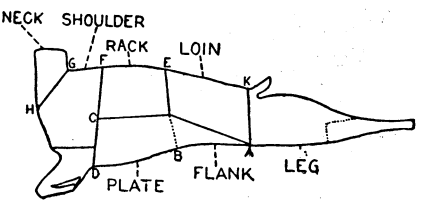

FIG. 28.—Method of cutting up a carcass of mutton.

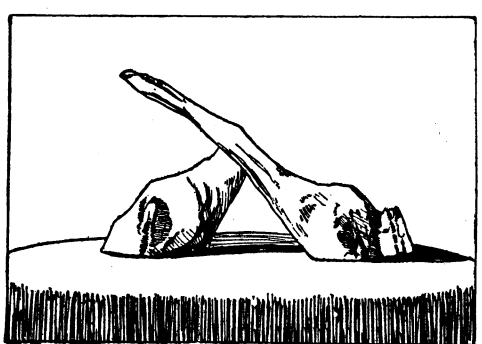

FIG. 29.—Leg of mutton: Untrimmed and trimmed.

Cutting pork.—Pork is unlike beef and mutton in that it should be cut just as soon as it is cooled through. If the carcass (fig. 32) has not been split to aid quick cooling it should be laid on the block and the head removed an inch back of the ears. Next remove the shoulders between the fourth and fifth ribs and cut off the hams about two inches in front of the pelvic bones. Split the hams and trim to a smooth rounded piece (fig. 33 *b*). The feet may be removed at the hock joints, but sawing them off a couple of inches above the hock is recommended, as the hams will then pack much closer in the barrel. Split the middle piece with a saw or ax and remove the leaf if this was not done when the hog was dressed. This may be easily accomplished by starting the leaf at the front end and peeling it backward with the fingers.

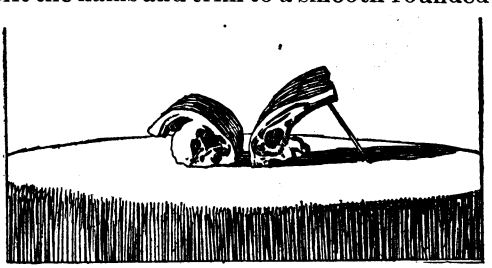

FIG. 30.—Mutton: Loin cut and rib cut for chops.

The kidney comes out with the fat. Take out the loin (fig. 34 *a*) and spareribs, leaving the lean meat found along the back on the loin, which may be used fresh as chops or for roasting. When cutting the meat from the ribs, the separation should be made as close to the ribs as possible. This much improves the quality of the bacon. Cut the side lengthwise into three evenly sized strips, or if to be cured and smoked, into two pieces, the upper one-third (called the back strip) for salt pork or lard, and the lower two-thirds (called the bacon strip) for bacon. The edges should always be trimmed up square, and all scraggy parts used for sausage or lard. Take the ribs and neck bones out of the shoulder (fig. 35) and trim it down to the top of the shoulder blade. Trim off all bloody spots and neck meat. Remove the foot above the kneejoint. Split the head through the center and then into quarters. On heavy hogs the jowls are often removed for salting before the head is split. The hams, shoulders, and bacon strip may be cured and smoked, the loin cut into chops or roasts, as in mutton, and used fresh. All lean trimmings are made into sausage and fat trimmings into lard. The feet, snout, and ears are pickled and the head boiled for head-cheese.

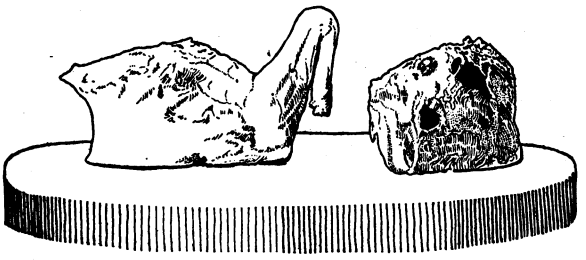

FIG. 31.—Shoulder of mutton: Untrimmed and trimmed.

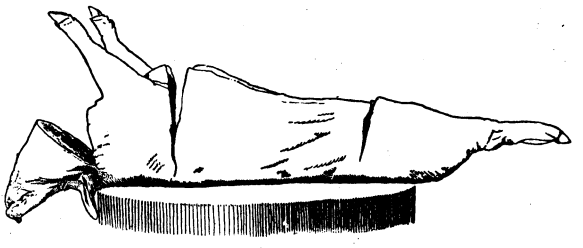

FIG. 32.—Carcass of pork: Head, shoulders, middle, hams.

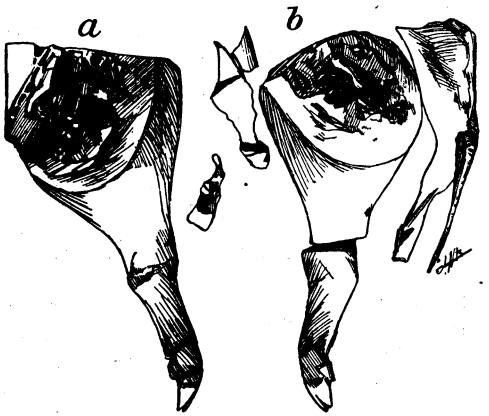

FIG. 33.—Hams: Trimmed and untrimmed.

If it is not intended to use the side pork as bacon, it is advisable to cut it into smaller pieces, as it packs closer in the barrel.

Cutting veal.—Veal is cut in a manner similar to mutton, the main difference being in the rump cut. The method in brief is as follows: Remove the flank and breast as in mutton; cut off the leg at the hip joint; cut the rump from the leg below the pelvic bones; cut the loin and ribs into

chops or roasts as desired. The shoulder may also be used as a roast It is more easily carved if the shoulder bones are removed before cooking.

The leg of veal is used as cutlets, veal steak, or as a fillet of veal for roasting.

KEEPING FRESH MEAT.

Cold storage.—Meat used while fresh is more nutritious and palatable than salted or cured meats. It is therefore desirable to use as much of it uncured as possible. It is very difficult to keep meat fresh during the summer months without the use of ice, and even then but little can be handled at one time on the ordinary farm. Where a room or family refrigerator can be kept at a temperature of 40° or less, with good ventilation and circulation of air, fresh meat can be kept for a week or ten days. It is very important that the circulation be free and the air dry. Moisture in a refrigerator tends to develop wet mold or slime and a little decay soon contaminates the whole piece. Less difficulty will be experienced in keeping fresh meat if it is kept in a room where the temperature is high and the air dry than where the temperature is low and the air damp.

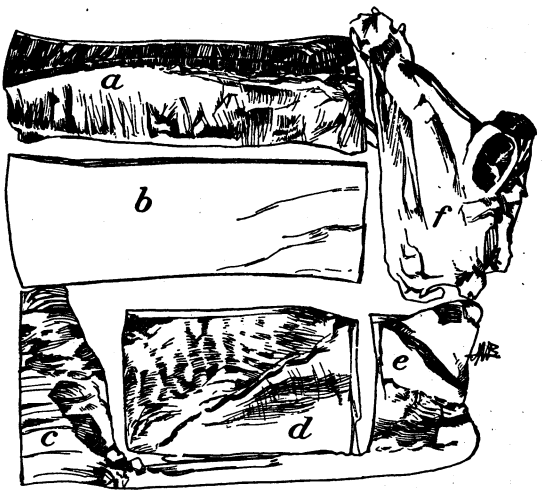

FIG. 34.—Side cuts of pork: *a*, Loin; *b*, fatback; *c*, spareribs; *d*, bacon strip; *e*, trimmings; *f*, leaf.

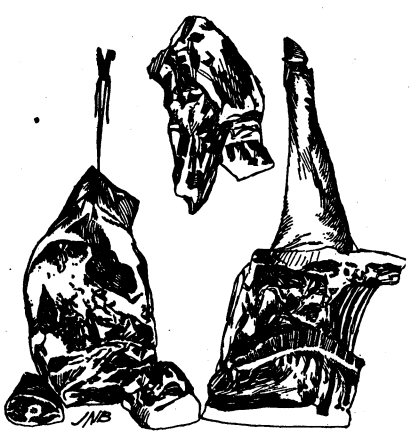

FIG. 35.—Pork shoulders: Untrimmed and trimmed, with trimmings.

Where an ice house is filled each year a small portion of it may be partitioned off as a cold-storage room. With the ice properly packed on three sides of it, and with good drainage, this makes a very satisfactory place for keeping meat, and it may also be used for storing butter and other perishable products.

In the North meat is kept during the cold season by freezing. A carcass is cut up into quarters, or even smaller pieces, and hung in an outbuilding, where it will remain frozen solid. When a portion is

wanted it may be cut off with a saw. If the meat is taken into a cold room and slowly thawed out the flavor is only slightly injured. No more should be taken in at one time than is wanted for immediate use. Repeated freezing and thawing are injurious to the flavor and quality of the meat; hence the importance of keeping it where the temperature will remain sufficiently low to prevent thawing.

Insects should not be allowed to get at the meat. For this reason a dark, cool cellar is the best place for keeping fresh meat on the farm. The cellar should be clean and free from odors or the meat will become tainted.

Snow packing.—Packing in snow is a better way of keeping meat than freezing. The carcass should be cut into steaks, roasts, and boiling meat. All trimming for table use should be done before allowing the meat to freeze. Lay each piece out to freeze separately, where it will not come in contact with other meat. Secure a box large enough to hold it all and put a layer of dry snow at the bottom. When the meat is frozen put in a layer, packing it so that no two pieces touch. Cover this with a layer of snow and lay alternate layers of snow and meat until the box is filled. Set the box in an outside shed where it will not be subject to sudden changes of temperature. For convenience in getting the meat when wanted it is well to pack the steaks in one section or end of the box and the roasts and stews in another. It will not then be necessary to disturb anything but the piece desired when a supply is needed. Use only dry snow in packing, be sure the meat is frozen solid, and it can then be kept through the winter unless there is a very warm spell. This method is applicable only to localities where snow and continued dry cold weather prevail during the winter months.

Cooking.—Partial cooking and packing in jars is also resorted to as a means of preserving meat in some localities. This method is applicable to a larger territory than either of the methods already given. It will be the most satisfactory in the keeping of fresh pork in any instance. Slice the loin and side meat or any portion of the carcass desired and fry until a little more than half done. Pack the slices as closely as possible in a stone jar and cover with hot lard. As the meat is wanted for use it may be removed from the jar and warmed up. If the jar is to stand for any length of time after it has been opened without using from it, it will be best to cover the top over again with lard. It is better to use several small jars than one large one. They should be kept in a cool, dark cellar to insure safe-keeping of the meat.

When meat is to be kept for only a few days a light coat of fine salt applied to the surface will be found sufficient if the meat is kept in a dark and comparatively cool place. Usually when meat is to be salted, however, it will be best to put it in brine of sufficient strength to preserve it for several weeks.

CURING MEATS.

Meat must be properly and thoroughly cooled to insure good keeping qualities when cured. If salted before the animal heat is out, the shrinkage of the muscles causes the retention of injurious gases, giving an offensive odor to the meat. Neither should meat be frozen when salted, as the action of the frost will prevent the proper penetration of the salt and uneven curing will result. It is important, also, that meat be cured as soon as cooled and while still fresh. Tainted meat may be cured so that it will keep, but nothing in the line of preservatives can bring back the natural flavor when it is once lost. The safest rule to follow is to salt meat as soon as the animal heat is out, and before it freezes or starts to decay. Ordinarily twenty-four to thirty-six hours after slaughtering will allow sufficient time for cooling.

VESSELS FOR CURING.

A clean hard-wood barrel is a suitable vessel in which to cure meat. A barrel made for the purpose is best, but where it can not be had a molasses or sirup barrel will answer.

A kerosene barrel that has been burned out and used for a water barrel for some time is often used for a meat barrel. The important point is to have it clean and tight enough to prevent leakage. A large stone jar is the best vessel that can be had. One holding 25 or 30 gallons is expensive, however, and must be carefully handled to prevent breakage. The jar is more easily cleaned than a barrel, and is in every way preferable if the first cost can be afforded. A barrel or jar that has once held meat may be used again and again unless meat has spoiled in it. If used repeatedly it will be necessary to scald it out thoroughly each time before packing with fresh meat.

PRESERVATIVES.

Salt, saltpeter, and sugar or molasses are the most commonly used preservatives, and are the only ones necessary for perfect curing and the finest quality of cured meats. Borax, boracic acid, formalin, salicylic acid, and other chemicals are sometimes used in preserving meats, but they are considered by so many authorities to be harmful to the health of the consumer that their use should be avoided. The proprietary preparations put on the market are also likely to be dangerous to health if used in large quantities. They are more active than salt and saltpeter, and the chief reason for their use is to hasten the curing process.

Salt is an astringent, and when applied alone to meat renders it very hard and dry. Its action is first to draw out the meat juices. In a few days it will contract and harden the muscle fibers, thus shrinking the volume of meat. Saltpeter is even more astringent than salt. Its

use aids in retaining the natural color of the flesh. In large quantities it is harmful to the health. Four to 6 ounces per 100 pounds of meat is as much as it is well to use. Sugar is not an astringent and its presence in the pickle softens the muscle fibers and improves the flavor of the meat. Saleratus (baking soda) is used in small quantities to sweeten the brine. In warm weather a small quantity will aid in preventing the brine from spoiling.

CURING IN BRINE AND DRY CURING COMPARED.

Brine-cured meats are best for farm use, for the reason that a suitable place for dry curing is not usually obtainable. It is also less trouble to pack the meat in a barrel and pour on a brine than to go over it three or four times to rub in the salt. The brining method also gives better protection from insects and vermin. Trouble is sometimes experienced in keeping brine, but if pure water is used and directions followed in making the brine there should be no difficulty in keeping it for a reasonable length of time. During warm weather brine should be closely watched. If it becomes "ropy," like sirup, it should be boiled or new brine made. A cool, moist cellar is the best place for brine curing. Dry curing may be done successfully in a cellar also, though even more moisture is needed to effect a thorough cure. The cellar should be dark and tight enough to prevent flies and vermin from damaging the meat.

RECIPES FOR CURING.

Corned beef.—The pieces commonly used for corning are the plate, rump, cross ribs, and brisket, or in other words the cheaper cuts of meat. The loin, ribs, and other fancy cuts are more often used fresh, and since there is more or less waste of nutrients in corning, this is well. The pieces for corning should be cut into convenient-sized joints, say, 5 or 6 inches square. It should be the aim to cut them all about the same thickness so that they will make an even layer in the barrel.

Meat from fat animals makes choicer corned beef than that from poor animals. When the meat is thoroughly cooled it should be corned as soon as possible, as any decay in the meat is likely to spoil the brine during the corning process. Under no circumstances should the meat be brined while it is frozen. Weigh out the meat and allow 8 pounds of salt to each 100 pounds; sprinkle a layer of salt one-quarter of an inch in depth over the bottom of the barrel; pack in as closely as possible the cuts of meat, making a layer 5 or 6 inches in thickness; then put on a layer of salt, following that with another layer of meat; repeat until the meat and salt have all been packed in the barrel, care being used to reserve salt enough for a good layer over the top. After the package has stood over night add, for every 100 pounds of meat, 4 pounds of sugar, 2 ounces of baking soda, and 4 ounces of saltpeter

dissolved in a gallon of tepid water. Three gallons more of water should be sufficient to cover this quantity. In case more or less than 100 pounds of meat is to be corned, make the brine in the proportion given. A loose board cover, weighted down with a heavy stone or piece of iron, should be put on the meat to keep all of it under the brine. In case any should project, rust would start and the brine would spoil in a short time.

It is not necessary to boil the brine except in warm weather. If the meat has been corned during the winter and must be kept into the summer season, it would be well to watch the brine closely during the spring, as it is more likely to spoil at that time than at any other season. If the brine appears to be ropy or does not drip freely from the finger when immersed and lifted, it should be turned off and new brine added, after carefully washing the meat. The sugar or molasses in the brine has a tendency to ferment, and, unless the brine is kept in a cool place, there is sometimes trouble from this source. The meat should be kept in the brine twenty-eight to forty days to secure thorough corning.

Dried beef.—The round is commonly used for dried beef, the inside of the thigh being considered the choicest piece, as it is slightly more tender than the outside of the round. The round should be cut lengthwise of the grain of the meat in preparing for dried beef, so that the muscle fibers may be cut cross wise when the dried beef is sliced for table use. A tight jar or cask is necessary for curing. The process is as follows: To each 100 pounds of meat weigh out 5 pounds of salt, 3 pounds of granulated sugar, and 2 ounces of saltpeter; mix thoroughly together. Rub the meat on all surfaces with a third of the mixture and pack it in the jar as tightly as possible. Allow it to remain three days, when it should be removed and rubbed again with another third of the mixture. In repacking put at the bottom the pieces that were on top the first time. Let stand for three days, when they should be removed and rubbed with the remaining third of the mixture and allowed to stand for three days more. The meat is then ready to be removed from the pickle. The liquid forming in the jars should not be removed, but the meat should be repacked in the liquid each time. After being removed from the pickle the meat should be smoked and hung in a dry attic or near the kitchen fire where the water will evaporate from it. It may be used at any time after smoking, although the longer it hangs in the dry atmosphere the drier it will get. The drier the climate, in general, the more easily meats can be dried. In arid regions good dried meat can be made by exposing it fresh to the air, with protection from flies.

Plain salt pork.—Rub each piece of meat with fine common salt and pack closely in a barrel. Let stand over night. The next day weigh out 10 pounds of salt and 2 ounces of saltpeter to each 100 pounds of

meat and dissolve in 4 gallons of boiling water. Pour this brine over the meat when cold, cover and weight down to keep it under the brine. Meat will pack best if cut into pieces about 6 inches square. The pork should be kept in the brine till used.

Sugar-cured hams and bacon.—When the meat is cooled, rub each piece with salt and allow it to drain overnight. Then pack it in a barrel with the hams and shoulders in the bottom, using the strips of bacon to fill in between or to put on top. Weigh out for each 100 pounds of meat 8 pounds of salt, 2 pounds of brown sugar, and 2 ounces of saltpeter. Dissolve all in 4 gallons of water, and cover the meat with the brine. For summer use it will be safest to boil the brine before using. In that case it should be thoroughly cooled before it is used. For winter curing it is not necessary to boil the brine. Bacon strips should remain in this brine four to six weeks; hams six to eight weeks. This is a standard recipe and has given the best of satisfaction. Hams and bacon cured in the spring will keep right through the summer after they are smoked. The meat will be sweet and palatable if it is properly smoked, and the flavor will be good.

Dry-cured pork.—For each 100 pounds of meat weigh out 5 pounds of salt, 2 pounds of granulated sugar, and 2 ounces of saltpeter, and mix them thoroughly. Rub the meat once every three days with a third of the mixture. While the meat is curing it is best to have it packed in a barrel or tight box. For the sake of convenience it is advisable to have two barrels, and to transfer the meat from one to the other each time it is rubbed. After the last rubbing the meat should lie in the barrel for a week or ten days, when it will be cured and ready to smoke. To cure nicely it is desirable to have a cool and rather moist place in which to keep it.

This recipe should not be used where the meat must be kept in a warm and dry place, as the preservatives will not penetrate easily and uniformly.

Head-cheese.—Cut a hog's head into four pieces. Remove the brain, ears, skin, snout, and eyes. Cut off the fattest parts for lard. Put the lean and bony parts to soak overnight in cold water in order to extract the blood and dirt. When the head is cleaned put it over the fire to boil, using water enough to cover it. Boil until the meat separates readily from the bone. Then remove it from the fire and pick out all of the bones. Drain off the liquor, saving a part of it for future use. Chop the meat up finely with a chopping knife. Return it to the kettle and pour on enough of the liquor to cover the meat. Let it boil slowly for fifteen minutes to a half hour. Season to taste with salt and pepper just before removing it from the fire. Turn it into a shallow pan or dish. Cover with a piece of cheese cloth and put on a board with a weight to make it solid. When cold it should be sliced thinly and served without further cooking.

Scrapple.—This article of food is made just as head-cheese is until the bones are removed and the meat chopped, when the liquor is added and the dish returned to the stove to boil. Corn meal is then stirred in until the contents are as thick as corn meal mush. Stir it constantly for the first fifteen minutes. Then set it back on the stove to boil slowly for an hour. When it is done pour it into a shallow dish to mold. When cold it is sliced thin and fried.

Pickled pig's feet.—Soak the pig's feet for twelve hours in cold water. Scrape them clean and remove the toes. Boil until soft; four to five hours will usually be required. Salt them when partially done. Pack them in a stone jar and cover them with hot, spiced vinegar. They are served cold, or split and fried in a batter made of eggs, flour, milk, and butter.

Trying out lard.—Only the best of fat should be used for choice lard. Leaf fat is the best. The back strip of the side also makes nice lard, as do the ham, shoulder, and neck trimmings. Gut fat should never be mixed with the leaf and back fat. It makes a strong-smelling lard and should be kept separate. All scraps of lean meat should be cut out of the fat before trying out, as they are very likely to stick to the kettle and get scorched, giving an unpleasant flavor to the lard. When preparing the fat for trying cut it into pieces from 1 to 1½ inches square. They should be nearly equal in size, so that they will try out in about the same time. Fill a clean kettle about three-fourths full and put in a quart of water, or, if convenient, a quart of hot lard. One or the other is necessary to prevent the fat from burning before the heat is sufficient to bring out the grease. Keep the kettle over a moderate fire until the cracklings are brown and light enough to float. Frequent stirring will be necessary to prevent burning. When done remove from the stove and allow to cool slightly, and then strain through a muslin cloth into a large jar. Stir it occasionally until it is cool enough to begin to solidify. If pails or smaller jars are to be filled the lard should be dipped out while just warm enough to be liquid. Stirring while the lard is cooling tends to whiten it and make it smoother. A quarter of a pound of saleratus added to each 100 pounds of fat has a like effect.

Sausage.—Pork sausage should be made only from clean, fresh pork. To each 3 pounds of lean pork add 1 pound of fat. As the pork usually used for sausage is the shoulder, neck, and lean trimmings, the sausage is quite likely to be too fat unless part of the fat is removed and used for lard. Mix the fat and lean meat together in chopping. Where a rotary cutter is used it is best to cut the meat twice. After it is cut the first time spread it out thinly and season. One ounce of pure, fine salt, one-half ounce of ground black pepper, and one-half ounce of pure leaf sage, rubbed fine, to each 4 pounds of meat, will suit the taste of most persons. The seasoning should be sprinkled

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thinly over the cut meat and the meat again run through the cutter to mix the seasoning thoroughly. This method will give a more even mixing of the spices than can be obtained by working it with the hands. For immediate use the sausage may be packed away in stone jars or crocks, to be sliced for frying. Many people stuff it into casings made from the small intestines of the hog. When this is done the intestines must be turned inside out and carefully cleaned.

Casings for sausage can be bought for about 3 cents a pound. At this price it will hardly pay to bother cleaning them for home use. The bought casings are more uniform in size and strength and will usually give better satisfaction. A good substitute for casings may be had in narrow muslin bags. These, when filled, should be 2½ or 3 inches in diameter and 18 to 24 inches long. Stuff the sausage in tightly by hand and hang in a cool place. If the sausage is to be kept for some time, melted lard should be rubbed over the outside of the bag. This excludes the air. Sausage may be kept for some time in a large jar if a thin coat of lard is put over the top.

Mixed sausage may be made from a mixture of pork and beef in almost any proportion. It is the custom on many farms to kill three or four hogs and a beef during the winter for the year's supply of meat. When this plan is followed a nice supply of sausage can be made from the trimmings. Sausage should not contain too much fat. A good proportion is 2 pounds of lean pork, 1 pound of fat pork, and 1 pound of lean beef. Chop together fine and season the same as pork sausage. Pack in jars, muslin bags, or casings. Many people prefer this to clear pork sausage, as it is not so fat.

Hamburg steak.—This is made from lean beef by running it through a sausage cutter. A very little fat should be added to the lean beef to make it juicy. It should be run through the cutter twice before using and salted slightly. A small amount of sugar-cured bacon is sometimes cut in with the beef to add flavor. Lean beef from the round makes the choicest Hamburg, but neck pieces, flanks, and trimmings are frequently used. Hamburg steak is not stuffed into casings, but left in bulk and made into patties for frying.

Bologna sausage.—To each 10 pounds of lean beef use 1 pound of fat pork, or bacon if preferred. Chop finely and season with 1 ounce of salt to each 4 pounds of meat, 1 ounce of the best black pepper (ground, pure) to each 6 pounds of meat, and a little ground coriander. Stuff into casings called beef "middles" or beef "rounds." If stuffed into middles, make the sausages 10 or 12 inches long, and allow them to hang straight. If stuffed into rounds make them 12 to 15 inches long, and tie the ends together so as to form rings. Smoke for ten or twelve hours. Cook in boiling water until the sausages float. Dry on clean hay or straw in the sun, and hang away in a cool place until wanted.

Casings.—Sausage casings are the intestines of hogs, cattle, or sheep which have been emptied and cleaned. They are turned inside out and soaked in a solution of lye or limewater, thoroughly washed, and then salted down. When cleaned and put up by a reputable packer they are as good as when cleaned at home, and when they can be bought at a reasonable price it hardly pays to clean them for home use. The casings from different animals are used for the various kinds of sausages. Beef casings are of three kinds, "rounds," made from the small intestines; "bungs," made from the large intestines; and "middles," made from that part of the entrails leading from the bung to the rectum. The "rounds" are used for bologna, the "bungs" for bologna, ham, and blood sausage, and the "middles" for bologna and summer sausage. Hog casings are made from the small intestines of the hog, and are used mainly for pork link sausage. Sheep casings are from the small intestines of sheep, and are commonly used for wienerwurst and other small sausages.

SMOKING OF MEATS.

Pickled and cured meats are smoked to aid in their preservation and to give flavor and palatability. The creosote formed by the combustion of the wood closes the pores to some extent, excluding the air, and is objectionable to insects.

House and fuel.—The smokehouse should be 8 or 10 feet high to give the best results and of a size suited to the amount of meat likely to be smoked. One 6 by 8 feet will be large enough for ordinary farm use. Ample ventilation should be provided to carry off the warm air in order to prevent overheating the meat. Small openings under the eaves or a chimney in the roof will be sufficient if arranged so as to be easily controlled. A fire pot outside of the house proper with a flue through which the smoke may be conducted to the meat chamber gives the best conditions for smoking. When this can not well be arranged a fire may be built on the floor of the house and the meat shielded by a sheet of metal. Where the meat can be hung 6 or 7 feet above the fire this precaution need not be taken. The construction should be such as to allow the smoke to pass up freely over the meat and out of the house, though rapid circulation is at the expense of fuel.

Brick or stone houses are best, though the first cost is greater than if they are built of lumber. Large dry-goods boxes and even barrels may be made to serve as smokehouses where only small amounts of meat are to be smoked. The care of meat in such substitutes is so much more difficult and the results so much less satisfactory that a permanent place should be provided if possible..

The best fuel for smoking meats is green hickory or maple wood smothered with sawdust of the same material. Hard wood of any

kind is preferable to soft wood. Resinous woods should never be used, as they are likely to impart bad flavors to the product. Corn cobs are the best substitute for hard wood and may be used if desired. Soft wood and corn cobs give off large amounts of carbon in burning, and this is deposited on the meat, making it dark in color and rank flavored. Juniper berries and fragrant woods are sometimes added to the fire to flavor the meat.

Filling the house.—Meat that is to be smoked should be removed from the brine two or three days before being put in the smokehouse. If it has been cured in a strong brine, it will be best to soak the pieces in cold water overnight to prevent a crust of salt from forming on the outside when drained. Washing the meat in tepid water and scrubbing clean with a brush is a good practice. The pieces should then be hung up to drain for a day or two. When drained they may be hung in the house. All should be suspended below the ventilators and should hang so that no two pieces come in contact, as this would prevent uniform smoking.

Keeping up the fire.—A slow fire may then be started, warming up the meat gradually. During the winter months in cold climates it is best to keep the fire going continually until the smoking is complete, holding the temperature at about the same point. If the fire is allowed to die down, the meat becomes cold and the smoke does not penetrate readily. This results in heavy smoke on the outside and very little on the inner portions of the meat. During the spring months and in the summer a light fire may be started every second or third day for a couple of weeks, the meat being allowed to hang in the smokehouse until sufficiently colored. When the fire is kept going steadily and an even temperature is maintained, twenty-four to thirty-six hours will be required to finish one lot of meat. Smoke will not penetrate frozen meat and it will be necessary to extract all frost from it before filling the house. The house should be kept dark at all times to prevent flies entering. As soon as smoked sufficiently the meat should be cooled by opening the ventilators or doors. When hard and firm it may be canvased or packed away for summer use.

KEEPING SMOKED MEATS.

Smoked meat may be left in the smokehouse for some time during moderate weather. The house should be kept perfectly dark and well enough ventilated to prevent dampness. A dry, cool cellar or an attic with free circulation will be a satisfactory place for smoked meats at all seasons if it is kept dark and flies are excluded.

If to be held only a short time, hams and bacon will need only to be hung out separately without covering. For longer keeping it will be necessary to wrap them first in paper and then in burlaps, canvas, or muslin and bury them in a grain bin or other suitable place, the object

being to gain a uniform temperature and to keep away insects. A coat of ground pepper rubbed into the piece before wrapping will be distasteful to them. For absolute safe-keeping for an indefinite period of time, it is essential that the meat be thoroughly cured. After it is smoked and has become dry on the surface it should be wrapped in parchment paper; or old newspapers will do where parchment can not be had. Then inclose in heavy muslin or canvas, and cover with yellow wash or ordinary lime whitewash, glue being added. Hang each piece out so that it does not come in contact with other pieces. Do not stack in piles.

Recipe for yellow wash.—For 100 pounds hams or bacon take

3 pounds barytes (barium sulphate).
0.06 pound glue.
0.08 pound chrome yellow (lead chromate); and
0.40 pound flour.

Fill a pail half full of water and mix in the flour, dissolving all lumps thoroughly. Dissolve the chrome in a quart of water in a separate vessel and add the solution and the glue to the flour; bring the whole to a boil and add the barytes slowly, stirring constantly. Make the wash the day before it is required. Stir it frequently when using, and apply with a brush.

FARMERS' BULLETINS.

The following is a list of the Farmers' Bulletins available for distribution, showing the number and title of each. Copies will be sent free to any address in the United States on application to a Senator, Representative, or Delegate in Congress, or to the Secretary of Agriculture, Washington, D. C. Numbers omitted have been discontinued, being superseded by later bulletins.

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